IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

SOUND VIEW INNOVATIONS, LLC, Plaintiff, v. CBS CORPORATION, CBS INTERACTIVE INC., SHOWTIME NETWORKS INC., SHOWTIME DIGITAL INC., CBS SPORTS INC., AND CBS NEWS INC., Defendants.	)	C.A. No. _____ **JURY TRIAL DEMANDED**

COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff Sound View Innovations, LLC ("Sound View"), for its Complaint for Patent Infringement against CBS Corporation ("CBS Corp."), CBS Interactive Inc. ("CBS Interactive"), Showtime Networks Inc. ("Showtime"), Showtime Digital Inc. ("Showtime Digital"), CBS Sports Inc. ("CBS Sports"), and CBS News Inc. ("CBS News") (collectively "CBS"), alleges as follows:

INTRODUCTION

1. Sound View is an intellectual property licensing company with a patent portfolio including more than 550 active and pending patents worldwide, approximately 350 of which are active U.S. Patents. Those patents were developed by researchers at Alcatel Lucent ("Lucent") and its predecessors. Lucent was home to the world-renowned Bell Laboratories, which has a long and storied history of innovation. Researchers at Lucent's Bell Laboratories developed a wide variety of key innovations that have greatly enhanced the capabilities and utility of computer systems and networks. This has resulted in benefits such as better and more efficient computer networking, computer security, and user experiences.

2. Patents enjoy the same fundamental protections as real property. Sound View, like any property owner, is entitled to insist that others respect its property and to demand compensation from those who take that property for their own use. CBS has used, and continues to use, Sound View's patents without authorization. Moreover, despite Sound View's repeated attempts to negotiate, CBS refuses to take a license though it continues to use Sound View's property.

NATURE OF THE CASE

3. This action arises under 35 U.S.C. § 271 for Defendants' infringement of Sound View's United States Patent Nos. 5,806,062 (the "'062 patent"), 6,125,371 (the "'371 patent"), 6,502,133 (the "'133 patent"), 6,708,213 (the "'213 patent"), and 6,757,796 (the "'796 patent") (collectively the "Patents-In-Suit").

THE PARTIES

4. Plaintiff Sound View is a Delaware limited liability company with its principal place of business at 2001 Route 46, Waterview Plaza, Suite 310, Parsippany, New Jersey 07054.

5. On information and belief, Defendant CBS Corp. is a Delaware corporation, with its principal place of business at 51 W 52nd St., New York, NY 10019. CBS Corp. may be served with process by serving its registered agent, Corporation Service Company, 251 Little Falls Drive, Wilmington, Delaware 19808. CBS Corp. has numerous subsidiaries, including CBS Interactive, Showtime, Showtime Digital, CBS Sports, and CBS News.

6. On information and belief, Defendant CBS Interactive is a Delaware corporation, with its principal place of business at 235 Second Street, San Francisco, CA 94105. CBS Interactive may be served with process by serving its registered agent, Corporation Service Company, 251 Little Falls Drive, Wilmington, Delaware 19808. CBS Interactive is a wholly owned subsidiary of CBS Corp. CBS Interactive is CBS Corp.'s online content network for information and entertainment, and operates, for example, cbs.com, CBS All Access, a content

streaming service, CBSN, a news streaming service available 24 hours a day seven days a week, and other online streaming services and websites.

7. On information and belief, Defendant Showtime is a Delaware corporation, with its principal place of business at 1633 Broadway, New York, New York 10019. Showtime may be served with process by serving its registered agent, Corporation Service Company, 251 Little Falls Drive, Wilmington, Delaware 19808. Showtime is a wholly owned subsidiary of CBS Corp. Showtime operates a digital streaming subscription offering which provides subscribers on-demand as well as live programming via the Internet. Showtime runs the Showtime Anytime online video service.

8. On information and belief, Defendant Showtime Digital is a Delaware corporation, with its principal place of business at 1633 Broadway, New York, New York 10019. Showtime may be served with process by serving its registered agent, Corporation Service Company, 251 Little Falls Drive, Wilmington, Delaware 19808. Showtime Digital is a wholly owned subsidiary of CBS Corp. Showtime Digital also purports to be a copyright holder of the www.sho.com website.

9. On information and belief, Defendant CBS Sports is a Delaware corporation, with its principal place of business at 28 E 28th Street, 15th Floor, New York, New York 10016. CBS Sports may be served with process by serving its registered agent, Corporation Service Company, 251 Little Falls Drive, Wilmington, Delaware 19808. CBS Sports is a wholly owned subsidiary of CBS Corp. On information and belief, CBS Sports partners with cbssports.com to deliver content.

10. On information and belief, Defendant CBS News is a Delaware corporation, with its principal place of business at 530 W 57th Street, New York, New York 10019. CBS News may

be served with process by serving its registered agent, Corporation Service Company, 251 Little Falls Drive, Wilmington, Delaware 19808. CBS News is a wholly owned subsidiary of CBS Corp. On information and belief, CBS News provides news and information for CBSN, cbsnews.com, and CBS Mobile.

JURISDICTION AND VENUE

11. This action arises under the patent laws of the United States, including 35 U.S.C. § 271 *et seq*. The jurisdiction of this Court over the subject matter of this action is proper under 28 U.S.C. §§ 1331 and 1338(a).

12. Venue is proper in this Court pursuant to 28 U.S.C. §§ 1391(b) and (c) and 1400(b), at least because each of the defendants resides in this judicial district. Moreover, defendants commit (directly and/or indirectly) acts of infringement in this judicial district.

13. This Court has personal jurisdiction over each of the defendants because each of the defendants, among other things: is incorporated under the laws of the State of Delaware; has placed services that practice the claims of the Patents-in-Suit into the stream of commerce with the knowledge, or reasonable expectation, that actual or potential users of such services were located within this judicial district; and has sold, advertised, solicited customers for, marketed, and distributed its services that practice the claims of the Patents-in-Suit in this judicial district.

THE PATENTS-IN-SUIT

14. Sound View incorporates by reference the preceding paragraphs as if fully set forth herein.

A. The ’062 Patent

15. The ’062 patent, titled “Data Analysis System Using Virtual Databases,” was duly and properly issued by the United States Patent and Trademark Office (“USPTO”) on September 8, 1998. A copy of the ’062 patent is attached hereto as Exhibit A.

16. Sound View is the owner and assignee of the '062 patent and holds the right to sue for and recover all damages for infringement thereof, including past infringement.

17. The '062 patent generally relates to customizable data processing applications that rely on a combination of reusable software operators, such as initial operators, query operators, terminal operators, and/or external operators, to process source information from a virtual database in a particular schema, such as HTML or XML, and transform that source information into another virtual database having the same schema.

18. Various types of documents may be stored in a computer system, such as word processing files, computer programs, HTML documents, financial files, employee files, etc. When dealing with large or complex files, it is often desirable to analyze or alter the structure and content of the documents; for example, comparing a first version to a second version, or analyzing dependency relationships between various sections of computer code.

19. In order to aid such analysis, a database may be constructed which contains information describing the structure of the documents. Various database queries may be performed to extract and process information describing the structure of the source documents. A collection of source documents, along with an associated database that describes the structure of the documents, is called a repository.

20. To analyze source document information, it is necessary to process information contained in the repository. A computer program that extracts or converts information from a repository is called an operator. Thus, an operator receives a source document and/or a database as input, processes the input, and produces some output. A simple example of an operator is a program that takes a source document as input and counts the number of occurrences of a particular word, and outputs a number containing the number of times the particular word occurs. The overall

function of the analysis—in the above example, a count of the number of occurrences of a particular word—is called an application.

21. At the time of the invention of the '062 patent, in existing repository analysis systems, operators were designed for single applications. Thus, the user indicated which operator he/she wished to apply to the repository, and the system processed the repository accordingly. The user was presented with the output when the processing was finished. Different operators processed the repository in different manners, but there was no convenient mechanism for combining the various operators to create new applications. Thus, when a new application was desired, a new operator would need to be designed from scratch.

22. Prior art repository analysis systems generally were closed systems, in that all operators were applied within the confines of the system, and all database accesses were performed within the system. For example, a repository analysis system operator may have produced as output a file containing information about the structure of a computer program. In conventional closed systems, this output could not be further processed by, for example, an external graphics program that would format the output in a desired manner. Instead, the output could only be formatted according to operators that were internal to the repository system. There was no convenient mechanism to allow the repository analysis system to communicate with operators that were external to the system.

23. The inventors of the '062 patent solved these discrete computer-based problems by providing an apparatus and method for creating data analysis applications using reusable software operators. For example, query operators receive data in a particular virtual database format, process the data in the virtual database, and output the results of the processing in another virtual database that has the same format as the original virtual database. A plurality of query operators

can be combined to customize the processing of the data. In addition, initial operators convert source information into the virtual database format so that the query operators can analyze the source data. External operators take an external format as input and create another external format as output. Also, terminal operators are used to convert a virtual database into an external format. A user can combine initial, query, terminal, and external operators to create customizable data processing applications.

24. The '062 Patent is directed to a technical improvement in software technology over the rigid general purpose data analysis applications and expensive custom applications that existed in the 1990s. The novel software structure of the claimed inventions enabled users to engineer their own purpose-built data analysis applications with reusable interoperable software operators.

25. Creating data analysis applications using reusable software operators, as described in the '062 patent, is particularly useful in that the external format data may be processed in various ways, thus allowing flexible presentation of the analysis results.

B. The '371 Patent

26. The '371 patent, titled "System and Method for Aging Versions of Data in a Main Memory Database," was duly and properly issued by the USPTO on September 26, 2000. A copy of the '371 patent is attached hereto as Exhibit B.

27. Sound View is the owner and assignee of the '371 patent and holds the right to sue for and recover all damages for infringement thereof, including past infringement.

28. The '371 patent generally relates to an improved multi-versioned database management system and method that creates multiple versions of data records affected by update transactions and increases capacity of memory by deleting versions of data records in response to associated time stamps and a measurable characteristic of the memory. In the context of the '371 patent, "measurable characteristics of the memory" are a current utilization or capacity of memory,

a trend analysis of a utilization or capacity of memory over a time period, or any other applied mathematics- or statistics-based analysis, including a comparison of any of the same with a threshold, ceiling/floor, limit, set point, or the like.

29. Database managers ("DBMs") have long been used in computer systems to manage large amounts of data. A DBM is a control application that supervises or manages interactions between application tasks and a database. The '371 patent inventors recognized that two important DBM functions are to ensure (i) data recovery (in response to a database crash caused by, for example, a power outage or a program crash), and (ii) data integrity. Data recovery involves rebuilding at least part of a database after all or part of its data is corrupted or lost, based on the last known valid or uncorrupted state. With respect to data integrity, latency in DBMs was largely intolerable. Latency refers to the time differential between a request for data and subsequent receipt of data. Latency is largely impacted by the type of computer memory on which the database is stored. There are two classifications of computer memory, volatile memory and non-volatile memory. Volatile memory is memory which does not retain data after power is lost, and is typically characterized by fast access to data. Non-volatile memory is memory that retains data after power is lost and is typically characterized by slower access to data. As a general matter, volatile memory is more expensive than non-volatile memory. Early computer database systems were divided among main (volatile) memory and disk (non-volatile memory). Those disk-based DBMs frequently failed to meet the performance requirements of contemporary information management systems because of the latencies inherent with non-volatile memory transactions.

30. One popular method to solve that latency problem was to map the entire database into the main memory. For data integrity purposes, however, those conventional main memory DBMs had to delay the processing of update transactions. For example, the conventional main

memory DBMs had to prevent an update transaction from modifying a data record while another process was simultaneously relying on that data record. In order to reduce conflicts between update transactions and read-only transactions, contemporary databases created multiple versions of data records, known as multi-versioning. In those multi-version DBMs, read-only transactions were given consistent, but out-of-date views of certain data records or data record types.

31. Although those multi-versioning techniques reduced "waits" and conflicts among transactions, they conflicted with DBM efforts to utilize main memory capacity efficiently because main memory continuously expended processing resources collecting data record versions that were no longer needed. The '371 patent solved this computer-based problem—that of lacking an efficient means to reclaim main memory space no longer used by multi-version techniques—by logically and economically aging data record versions in the database. The '371 patent inventions extend to, and provide benefits to, DBMs that utilize secondary or mass storage as opposed to main memory.

32. In particular, to solve this discrete computer-centric problem, the '371 patent teaches a system that includes each of a time stamping controller, a versioning controller and an aging controller. The time stamping controller assigns a time stamp to transactions to be performed on the database, and may be assigned as a function of a time stamp counter. The time stamp operates to preserve an order of the transactions. The versioning controller creates multiple versions of data records of the database that are affected by update transactions. The aging controller, which may be associated, directly or indirectly, with each of the time stamping and versioning controllers, monitors at least one measurable characteristic and deletes prior ones of the multiple data record versions in response to the time stamp and the at least one measurable characteristic to thereby increase the data capacity of the database, thus increasing memory

capacity.

33. The ’371 Patent discloses a technical solution to the inefficiencies associated with multi-versioning in computer databases—i.e., the process by which a database creates multiple versions of the same file. Creating multiple versions of the same file increased database speed and integrity, but did so at the expense of memory (in which those multiple file versions had to be stored). The claimed inventions introduced a new scheme for storing and organizing multiple versions of the same file based on timestamps and a measurable characteristic of the memory, thereby leveraging the advantages of multi-versioning while conserving memory resources.

34. The monitoring of memory utilization as embodied in the ’371 patent allows DBMs to avoid continuously expending memory resources collecting and aging older, no longer needed data record versions.

C. The ’133 Patent

35. The ’133 patent, titled “Real-Time Event Processing System with Analysis Engine Using Recovery Information,” was duly and properly issued by the USPTO on December 31, 2002. A copy of the ’133 patent is attached hereto as Exhibit C.

36. Sound View is the owner and assignee of the ’133 patent and holds the right to sue for and recover all damages for infringement thereof, including past infringement.

37. The ’133 patent generally relates to real-time event processing in applications such as telecommunications and computer networks, and more particularly, to a method, apparatus, and system for processing events in a real-time analysis engine, and storing recovery information in a main-memory database system associated with the real-time analysis engine.

38. At the time of the invention of the ’133 patent, high performance real-time event processing applications had performance requirements that could not be met by conventional general purpose database management systems. For example, some real-time event processing

applications required the service time for such events to not exceed a few milliseconds. However, with conventional database technology, the service time costs of invoking a structured query language operation over a client-server interface, or the service time costs associated with a single access to secondary storage, could account for hundreds of milliseconds. These limitations led real-time event processing applications instead to rely on the use of custom database systems.

39. These custom database systems had disadvantages: (1) there was a high cost of developing and maintaining custom systems; (2) those high costs could not be amortized across a number of different applications; and (3) custom database systems were generally inflexible and difficult to adapt to unforeseen or evolving requirements.

40. At the time of the invention of the ’133 patent, a need therefore existed for an improved real-time event processing system that could provide the performance benefits of custom database systems, but without sacrificing the flexibility and maintainability typically associated with conventional general-purpose database systems.

41. The inventors of the ’133 patent solved that discrete computer-based problem and improved upon the existing real-time event processing systems by providing a real-time event processing system that avoids the problems associated with custom systems.

42. Using a real-time analysis engine operating in the manner described by the ’133 patent is particularly useful because it can provide transactional access to persistent data, but at the speed of a main-memory system, and it also incorporates a recovery model which stores recovery information in order to facilitate roll-back to a recovery point after a failure.

43. The ’133 Patent claims an improved real-time event-processing system delivering increased performance in telecommunications and computer networks. Conventional event-processing systems were only compatible with specialized custom database systems, which were

costly to develop and maintain. The inventions of the '133 Patent claim an improvement in computer functionality—including a real-time analysis engine that is associated with a main-memory system. By associating a real-time analysis engine with a main-memory system (which is much faster than "secondary" storage used in the prior art), the invention provides the performance benefits of custom database systems with the cost savings and flexibility associated with conventional general-purpose database systems.

44. In accordance with the '133 patent, recovery information regarding a recovery point for a given real-time analysis engine may be stored in a memory portion of the main-memory database system. This way, the real-time event processing system provides a critical path for event processing that is specifically designed for high performance, while also retaining many desirable features of conventional database systems, including high-level declarative programming interfaces, and the transactional correctness properties of atomicity, consistency, isolation and durability. These features of the '133 patent enhance the reliability, robustness, usability and maintainability of the real-time event processing system and any applications built thereon.

D. <u>The '213 Patent</u>

45. The '213 patent, titled "Method for Streaming Multimedia Information Over Public Networks," was duly and properly issued by the USPTO on March 16, 2004. A copy of the '213 patent is attached hereto as Exhibit D.

46. Sound View is the owner and assignee of the '213 patent and holds the right to sue for and recover all damages for infringement thereof, including past infringement.

47. The '213 patent generally relates to streaming multimedia data (*e.g.*, audio and video data) over the Internet and other networks, and, more specifically, to methods to improve caching of streaming multimedia data from a content provider over a network to a client's computer.

48. At the time of the invention of the ’213 patent, multimedia data could either be downloaded by the client or streamed over the network to the client. Streaming eliminated the need for the client to wait for the downloading to complete before watching or listening to the multimedia data. However, with conventional unicast connections, streaming posed problems to content providers in that server load increased linearly with the number of clients, to Internet service providers in that streaming caused network congestion problems, and to clients in that streaming often resulted in high start-up latency and unpredictable playback quality.

49. Conventional caching systems attempted to address network congestion, but these were unsuitable for streaming multimedia data: (1) video files were typically too large to be cached in their entirety, so only a few streams could be stored at a cache; (2) breaking video files into smaller pieces was not feasible because the caching systems would treat different chunks from the same video object independently; and (3) streaming multimedia has temporal characteristics, like the transmission rate, while conventional caching was only capable of handling static web objects.

50. The inventors of the ’213 patent solved those discrete computer-based problems and improved upon conventional caching techniques by providing a novel architecture and method for supporting high quality live and on-demand streaming multimedia on network systems using helper servers.

51. The techniques described in the ’213 patent advantageously reduce server and network loads by employing helper servers with dynamic data transfer rate control to overcome arrival time and range heterogeneity in client requests, thereby improving the quality perceived by end users making requests for streaming media objects.

52. The ’213 patent has been recognized with the 2013 Edison Patent Award in Multimedia Technology for inventing “fundamental concepts and techniques to design content

distribution networks and caching systems originally built for text and images to better support streaming media over the Internet." A press release regarding the award is attached as Exhibit E.

E. The '796 Patent

53. The '796 patent, titled "Method and System for Caching Streaming Live Broadcasts Transmitted Over a Network," was duly and properly issued by the USPTO on June 29, 2004. A copy of the '796 patent is attached hereto as Exhibit F.

54. Sound View is the owner and assignee of the '796 patent and holds the right to sue for and recover all damages for infringement thereof, including past infringement.

55. The '796 patent generally relates to real-time multimedia applications, and more specifically, to methods for decreasing the playback delay at a client computer of a live streaming broadcast transmitted over a network.

56. At the time of the invention of the '796 patent, live broadcasting of streaming multimedia over the Internet (including through movie broadcasts, television, sports, talk and music radio, business events, seminars, and tutorials) was becoming increasingly popular.

57. Streaming data involves sending a continuous transmission of data from the server to a client. At the client computer, received data is buffered in a cache memory and continuously processed as soon as, or soon after, being received by the client. The client computer creates a multimedia output from the received multimedia data. The advantage of streaming is that the client computer does not have to wait until all data is downloaded from the server before some of the data is processed and the multimedia output is created.

58. Because multimedia applications involve transferring large amounts of information, such systems place a considerable load on the resources of the network, server, and client. As more people accessed network-based multimedia applications, there was an increased demand for longer, more complicated, more flexible multimedia applications.

59. Multicast technology was developed for scaling live broadcasts. However, one problem that such technology did not address was that of start-up latency, *i.e.*, the delay between the client requesting multimedia playback and the beginning of the playback on the client.

60. The techniques described in the '796 patent solve that discrete computer-based problem and improve upon prior caching systems to better support the live broadcasting of streaming multimedia over the Internet and other network systems. In particular, the '796 patent provides novel methods for supporting high quality live streaming multimedia broadcasts on a network by using helper servers which operate as caching and streaming agents inside the network to enhance caching and reduce playback delay without sacrificing perceived playback quality. To allow the client's buffer to be filled faster (and thus allow playback to start faster), a playout history buffer is allocated and maintained at the helper server in response to a client request for a particular live streaming media broadcast. The playout history buffer operates as a moving window of fixed size that advances with the live broadcast stream, storing the last few seconds of the datastream. An advantage of utilizing playout history buffers is that as subsequent client requests are received at the helper server for a live streaming media broadcast which is currently being stored in a previously allocated playout history buffer in response to a former request, each subsequent request can be serviced directly from the playout history buffer thereby reducing start up latency. An advantage in streaming data packets to each client is realized by virtue of having some number of them pre-stored in the playout history buffer. When a request is received at the helper server, the stored packets are immediately available for distribution to the requesting client.

61. Servicing subsequent requests from the playout history buffer prevents the need to individually service each subsequent request from the content server as a unicast datastream, which reduces network congestion by redirecting requests to the helper server. Also, the playout history

buffer (which may be considered a form of short term dynamic cache) allows the cached data to be made immediately available to a requesting client to fill the client's playout buffer as rapidly as possible.

BACKGROUND FACTS

62. On October 10, 2016, Sound View sent a letter notifying CBS of its infringement of the '371, '133, '213 and '796 patents via a letter to CBS Interactive. Sound View notified CBS of representative CBS features that infringe those patents and explained its intention to allow CBS to continue to use the inventions covered in those patents through a license from Sound View. Sound View also requested a meeting to discuss the matter in more detail.

63. Counsel for CBS responded to this letter on February 1, 2017, requesting that Sound View provide claim charts.

64. On April 4, 2017, Sound View provided claim charts for the '213 and '796 patents further detailing how CBS infringed and infringes those patents, and again requested a meeting to discuss the matter in more detail.

65. On April 10, 2017, Sound View wrote to David Nevens, Showtime's Chairman & CEO, notifying Showtime of its infringement of the '213, and '796 patents.

66. On April 10, 2017, Sound View wrote to counsel for CBS, informing them that notice of infringement was provided to Showtime (a wholly owned subsidiary of CBS Corp.).

67. On April 11, 2017, counsel for CBS responded, stating that it would be handling the Showtime correspondence together with the CBS correspondence.

68. CBS did not substantively respond to Sound View's April 10, 2017 letter.

69. On June 12, 2017, Sound View wrote CBS to follow up on the prior correspondence. Sound View included updated claim charts for the '213 and '796 patents. Sound View also reiterated its interest in having a productive licensing discussion with CBS.

70. CBS did not respond to Sound View's June 12, 2017 letter.

71. On July 26, 2017, Sound View wrote CBS once again, indicating Sound View's continuing desire to reach a negotiated licensing agreement.

72. On July 26, 2017, counsel for CBS wrote back to Sound View but again failed to provide a substantive response.

73. On July 27, 2017, Sound View wrote asking if CBS was interested in engaging in business discussions, or if litigation would be required to resolve the matter.

74. CBS did not respond to Sound View's July 27, 2017 letter.

75. On January 18, 2018, Sound View again wrote CBS and expressed unwillingness to allow CBS to continue its willful infringement of the patents-in-suit.

76. On February 6, 2018, counsel for CBS requested claim charts for the '133 and '371 patents.

77. On February 20, 2018, Sound View provided claim charts further detailing CBS's infringement of the '062, '371, and '133 patents. It then followed up with additional details concerning Showtime's infringement of the '213, and '796 patents on February 28, 2018.

78. On April 12, 2018, counsel for CBS wrote Sound View claiming that CBS did not require a license from Sound View.

79. On May 2, 2018, Sound View wrote to CBS to further detail CBS's infringement of the patents in suit, and CBS's requirement for a license from Sound View.

80. On May 29, 2018, Sound View again wrote to CBS and explained that CBS's infringement merited serious consideration for litigation if the issue could not be resolved through licensing discussions.

81. On July 13, 2018, counsel for CBS responded to Sound View's May 2, 2018 email,

again claiming that CBS did not require a license from Sound View.

82. On November 14, 2018, Sound View responded further explaining CBS's need for a license from Sound View.

83. Despite Sound View's repeated efforts and lengthy correspondence, CBS has refused to engage in any meaningful discussion about reaching a licensing agreement to end its infringement of Sound View's patents. Instead, CBS continues to knowingly, intentionally, and willfully infringe Sound View's patents so as to obtain their significant benefits without paying any compensation to Sound View. Sound View thus has no other choice but to seek relief through litigation.

COUNT ONE
INFRINGEMENT OF THE '062 PATENT

84. Sound View incorporates by reference the preceding paragraphs as if fully set forth herein.

85. The '062 patent is valid and enforceable.

86. CBS's platforms, web pages, and servers, including at least CBS Interactive's webpage cbs.com, and Showtime and Showtime Digital's webpages showtime.com and sho.com (the "CBS DOM Services"), have used the Document Object Model ("DOM") to create and process customizable data analysis and processing applications. The DOM is an application programming interface ("API") that allows documents to be modelled using objects of a variety of data formats, including HTML and XML. It defines the logical structure of documents and the way a document is accessed and manipulated.

87. Using the DOM, the nodes (or objects) of every document are organized in a tree structure, called the "DOM tree," and can be manipulated individually using the DOM methods (or operators). With the DOM, programmers can build documents, navigate their structure, and

add, modify, or delete elements and content. Anything found in an HTML or XML document can be manipulated in this way using the DOM, with a few exceptions.

88. As an object model, the DOM identifies: (1) the interfaces and objects used to represent and manipulate a document; (2) the semantics of these interfaces and objects – including both behavior and attributes of the relationships; and (3) collaborations among these interfaces and objects.

89. jQuery is a DOM manipulation library that makes it easier to use JavaScript on a website by taking more complex code needed to manipulate the DOM and wrapping the code into simpler methods that can be called with smaller amounts of JavaScript.

90. On information and belief, CBS has used jQuery throughout its products and services, including at least the CBS DOM Services.

91. CBS has infringed one or more claims of the ’062 patent under 35 U.S.C. § 271(a), literally and/or under the doctrine of equivalents, by making, using, selling, and/or offering for sale in the United States, and/or importing into the United States, products and/or methods encompassed by those claims, including for example, by making, using, selling, offering for sale, and/or importing its CBS platforms, web pages, and servers, including for example its web pages and servers that use and have used jQuery.

92. For example, CBS has infringed claim 14 by using a method for processing information (such as the CBS DOM Services) comprising the steps of:

a. providing a plurality of software operators (such as jQuery methods, including, for example, “.removeClass( ),” “.addClass( ),” “.find( ),” “.attr( ),” “.append( ),” “.removeAttr( ),” and “.stop( )”) each configured to receive a virtual database (such as DOM nodes (or objects) or web pages, describing the structure of a document) having a first schema (such as

HTML or XML), for processing information contained in said virtual database (such as by applying a jQuery method to a node in the DOM tree), and for outputting a virtual database having said first schema; and

b. combining at least two of said software operators to create an application (such as that used to construct and serve the CBS DOM Services).

93. Sound View has been damaged by CBS's infringement of the '062 patent and is entitled to recover from CBS the damages sustained by Sound View as a result of CBS's wrongful acts in an amount adequate to compensate Sound View for CBS's infringement subject to proof at trial.

COUNT TWO
INFRINGEMENT OF THE '371 PATENT

94. Sound View incorporates by reference the preceding paragraphs as if fully set forth herein.

95. The '371 patent is valid and enforceable.

96. On information and belief, CBS has used the Cassandra database in its data systems, including without limitation, mailing list management API endpoints used by CBS Interactive's CNET, ZDNet, and TechRepublic (the "CBS Cassandra Services"). Additionally, current and former employees of CBS have openly advertised CBS's use of the Cassandra database.

97. The Cassandra database is stored in a memory comprising a combination of "memtable" and "SSTable." A memtable is a Cassandra table-specific, in-memory data structure that resembles a write-back cache. A sorted string table (SSTable) is an immutable data file to which Cassandra writes memtables periodically. SSTables are stored on disk sequentially and maintained for each Cassandra table.

98. During a write transaction, a timestamp is assigned to the transaction performed on

the Cassandra database.

99. Cassandra databases utilize periodic compaction to manage the accumulation of SSTables.

100. Cassandra databases have configurable parameters (such as min_threshold and max_threshold parameters) that control when a minor compaction occurs.

101. CBS has used a distributed database known as HBase in its data systems. For example, on information and belief, CBS platforms, web pages, servers, or products that include or use applications based on the HBase database (the "CBS HBase Services") include, without limitation, the use of Web Analytics on Hadoop at CBS Interactive. Additionally, current and former employees of CBS have openly advertised CBS's use of the HBase database.

102. HBase is a column-oriented database management system that runs on top of a Hadoop Distributed File System. Applications store data into HBase tables that are made up of rows and columns. Table cells—the intersection of row and column coordinates—are versioned. When something is written into one of CBS's HBase databases, it is first written to an in-memory store (memstore), and then is flushed into a store file. When CBS puts data into HBase, a timestamp is required and is generated by HBase. Performing a "put" operation to HBase creates a new version of a cell.

103. CBS controls the number of versions stored in HBase.

104. During major compaction, excess versions are deleted from the store file. The number of versions to be deleted is determined by comparing the number of versions stored to the MaxVersions. If the number of stored versions of the store files is greater than the MaxVersions, then the excess versions are deleted. The versions that are deleted are selected based on timestamps.

105. During minor compactions, a configurable number of smaller store files are combined into fewer, but larger store files. The store files to be compacted in a minor compaction are determined at least in part by configurable store file number, size, and/or ratio parameters. During a minor compaction, versions are also deleted based on timestamps.

106. CBS has infringed one or more claims of the '371 patent under 35 U.S.C. § 271(a), literally and/or under the doctrine of equivalents, by making, using, selling, and/or offering for sale in the United States, and/or importing into the United States, products and/or methods encompassed by those claims, including for example, by making, using, selling, offering for sale, and/or importing servers and systems that include or use applications based on the Cassandra database, such as mailing list management API endpoints used by CBS Interactive brands including CNET, ZDNet, and TechRepublic.

107. CBS has also infringed one or more claims of the '371 patent under 35 U.S.C. § 271(a), literally and/or under the doctrine of equivalents, by making, using, selling, and/or offering for sale in the United States, and/or importing into the United States, products and/or methods encompassed by those claims, including for example, by making, using, selling, offering for sale, and/or importing systems and platforms that include or use applications based on HBase.

108. At least by October 10, 2016, Sound View informed CBS that its systems and applications infringe the '371 patent. However, CBS did not stop infringing.

109. For example, CBS infringes claim 1 by using a processing system (such as CBS's servers) for use with a database of data records (such as a Cassandra database), said database stored in a memory, comprising:

a. a time stamping controller that assigns a time stamp to transactions to be performed on said database (such as a timestamp assigned during a write transaction);

b. a versioning controller that creates multiple versions of ones of said data records affected by said transactions that are update transactions (such as the new timestamped version of an updated row in the database); and

c. an aging controller that monitors a measurable characteristic of said memory (such as a measurement associated with a min_threshold or max_threshold parameter) and delete ones of said multiple versions of said ones of said data records in response to said time stamp and said measurable characteristic thereby to increase a capacity of said memory (such as by performing a compaction process in response to the min_threshold parameter being met or exceeded).

110. As another example, CBS infringes claim 1 by using a processing system (such as CBS's servers) for use with a database of data records (such as an HBase database), said database stored in a memory, comprising:

a. a time stamping controller that assigns a time stamp to transactions to be performed on said database (such as a timestamp assigned during a write transaction);

b. a versioning controller that creates multiple versions of ones of said data records affected by said transactions that are update transactions (such as the new timestamped version of an updated cell in the database); and

c. an aging controller that monitors a measurable characteristic of said memory (such as the number of versions being stored in the store file, and/or the store file number, size, and/or ratio parameters) and deletes ones of said multiple versions of said ones of said data records in response to said time stamp and said measurable characteristic thereby to increase a capacity of said memory (such as by deleting a version of the cell based on the measurable characteristic and the timestamp of each version).

111. Sound View has been damaged by CBS's infringement of the '371 patent and is entitled to recover from CBS the damages sustained by Sound View as a result of CBS's wrongful acts in an amount adequate to compensate Sound View for CBS's infringement subject to proof at trial.

112. In committing these acts of infringement, CBS committed egregious misconduct including, for example, acting despite knowing that its actions constituted infringement of a valid patent, or recklessly disregarding the fact that its actions constituted an unjustifiably high risk of infringement of a valid and enforceable patent.

113. CBS's infringement of the '371 patent was and is deliberate and willful, entitling Sound View to increased damages under 35 U.S.C. § 284 and to attorney fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

COUNT THREE
INFRINGEMENT OF THE '133 PATENT

114. Sound View incorporates by reference the preceding paragraphs as if fully set forth herein.

115. The '133 patent is valid and enforceable.

116. On information and belief, CBS uses and has used a framework known as Apache Storm ("Storm") to perform stream processing of events in real-time and continuous data processing (the "CBS Storm Services"), including database updates and processing messages. Those applications include, without limitation, CBS Interactive's web analytics platform.

117. The CBS Storm Services' architectures are composed of three components: (1) "Streams," which are unbounded sequences of tuples that are processed; (2) "Spouts," which are sources of streams, and (3) "Bolts," which are responsible for processing the Streams in real-time.

118. Those services are integrated with CBS's infrastructure, such as its database

systems, messaging systems, and monitoring/alerting systems. Events are generated by various CBS system applications, such as discovery, real-time analytics, personalization, search, and revenue optimization. When these system applications generate events, these events are grouped into Streams.

119. Spouts emit Streams into the topology, so that they can subsequently be processed.

120. Bolts are real-time analysis engines that process the Streams. Bolts are capable of performing simple stream transformations, and multiple Bolts are used for more complex stream transformations.

121. CBS's use of Storm enables CBS to process billions of events per day.

122. The CBS Storm Services systems have the capability to save and retrieve in-memory the state of the Bolts. For example, Storm has a default in-memory based state implementation and also a Redis backed implementation that provides state persistence. This main-memory database within Storm has the function known as state management, allowing it to automatically and periodically take snapshots of the state of the Bolts.

123. CBS infringes and has infringed one or more claims of the '133 patent under 35 U.S.C. § 271(a), literally and/or under the doctrine of equivalents, by making, using, selling, and/or offering for sale in the United States, and/or importing into the United States, products and/or methods encompassed by those claims, including for example, by making, using, selling, offering for sale, and/or importing servers and products, such as CBS's servers used for real-time analytics and real-time processing, that include or use applications based on Apache Storm.

124. At least by October 10, 2016, Sound View informed CBS that its systems and applications infringe the '133 patent. However, CBS has not stopped infringing.

125. For example, CBS infringes claim 13 by using a method of processing events (such

as Streams) generated by at least one system application (such as the CBS Storm Services), the method comprising the steps of:

a. processing the events in at least one real-time analysis engine (such as a Bolt); and

b. storing in a main-memory database system (such as Storm's default in-memory based state implementation) associated with the real-time analysis engine recovery information regarding a recovery point for the real-time analysis engine (such as the state information relating to the Bolt's state).

126. Sound View has been damaged by CBS's infringement of the '133 patent and is entitled to recover from CBS the damages sustained by Sound View as a result of CBS's wrongful acts in an amount adequate to compensate Sound View for CBS's infringement subject to proof at trial.

127. In committing these acts of infringement, CBS committed egregious misconduct including, for example, acting despite knowing that its actions constituted infringement of a valid patent, or recklessly disregarding the fact that its actions constituted an unjustifiably high risk of infringement of a valid and enforceable patent.

128. CBS's infringement of the '133 patent was and is deliberate and willful, entitling Sound View to increased damages under 35 U.S.C. § 284 and to attorney fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

COUNT FOUR
INFRINGEMENT OF THE '213 PATENT

129. Sound View incorporates by reference the preceding paragraphs as if fully set forth herein.

130. The '213 patent is valid and enforceable.

131. At least by April 4, 2017, Sound View informed CBS that its systems and applications infringe the '213 patent. However, CBS has not stopped infringing.

132. A content delivery network, also called a content distribution network (CDN), is a network of connected computers that delivers internet content, such as streaming video, to end users. When a service, such as CBS, uses a CDN, the content comes from an "origin server" and is replicated on numerous "edge servers." When an end user requests particular content, the CDN provides the content from an edge server near to the end user. This arrangement has numerous benefits, such as: faster response time (lower latency) because the content is served from a nearby edge server, instead of a potentially distant origin server; greater throughput because the edge server will be less loaded than a single origin server would be; and greater availability because the multiplicity of servers allows for a request to be failed over to another server if an edge server crashes.

133. CBS provides and has provided streaming services, including at least CBS Interactive's streaming services cbsinteractive.com, cbsnews.com, cbs.com, and CBS All Access, Showtime and Showtime Digital's streaming services showtime.com and sho.com, and Showtime's streaming services Showtime Now and Showtime Anytime (the "CBS '213 Services"), to allow users to watch streaming video. CBS provides streaming video services to its users utilizing content delivery networks, including at least Akamai Technologies Inc. ("Akamai"), Fastly Inc. ("Fastly"), Level 3 Communications, LLC ("Level 3), and Limelight Networks, Inc. ("Limelight) (collectively, "the CDNs"). The CBS '213 Services provide video that is encoded using certain protocols, including the HTTP Live Streaming ("HLS") protocol and the MPEG-DASH protocol.

134. HLS is an HTTP-based media streaming communications protocol. It works by

breaking the overall stream into a sequence of small HTTP-based file downloads; each download is one short chunk that is part of an overall potentially unbounded transport stream. As the stream is played, the client may select from a number of different alternate chunks containing the same material encoded at a variety of data rates.

135. MPEG-DASH is an adaptive bitrate streaming technique that enables high quality streaming of media content over the Internet delivered from conventional HTTP web servers. Similar to HLS, MPEG-DASH works by breaking the content into a sequence of small HTTP-based file segments, each segment containing a short interval of playback time of content that is potentially many hours in duration, such as a live broadcast of a sports event. The content is made available at a variety of different bit rates, with alternative segments encoded at different bit rates covering aligned short intervals of playback time.

136. The CDNs each support CBS's delivery of video content to users using MPEG-DASH and/or HLS. Moreover, each of the CDNs openly advertises and promotes the use of those protocols to deliver video content to users.

137. Knowing that each of the CDNs supports the delivery of video content using MPEG-DASH and/or HLS, and directing and controlling such support, CBS delivers video streams to its users, including the CBS '213 Services, using at least the CDNs by transcoding videos into MPEG-DASH segments with different bit rates, and providing those segments to each of the CDNs. The CDNs store those MPEG-DASH segments in caches, and send them to CBS users who request to view the video files.

138. CBS contracts or has contracted with each of the CDNs, so that when at least certain CBS users request a video stream, the request is routed to one of the edge servers of the CDN, which receives the request. The edge server then allocates a local buffer to store portions of the

stream.

139. CBS had and has the ability to configure and/or customize aspects of the operation of each of the CDNs in delivering content to its users. Moreover, on information and belief, CBS can and has configured and/or customized aspects of the operation of each of the CDNs in delivering content to its users. For example, CBS can customize the operation of the Akamai CDN through configuration tools, such as Akamai's Luna Control Center. As a further example, CBS can customize the operation of the Fastly CDN through configuration tools, such as the Fastly Control Panel. As a further example, CBS can customize the operation of the Level 3 CDN through configuration tools, such as Level 3 CDN Portal. As a further example, CBS can customize the operation of the Limelight CDN through configuration tools, such as Limelight Control.

140. At least through contracting with Akamai and configuring and/or customizing aspects of the operation of the Akamai CDN, CBS has knowledge of the operations of the Akamai CDN and the steps the Akamai systems will perform in order to deliver content to CBS's users. CBS thus knowingly causes and specifically intends for Akamai to perform those steps, or directs and controls Akamai's performance of these steps by means of at least its contractual relationship with Akamai and by configuring and customizing Akamai's CDN.

141. For example, utilizing Akamai's CDN requires storing segments in a local buffer on an edge server, and at least by entering into a contractual relationship with Akamai, CBS knowingly intends for Akamai to do so, or directs and controls Akamai (either implicitly or explicitly) to do so. CBS intends for, or directs, the Akamai edge server to request the MPEG-DASH or HLS segments from a datacenter cache, store them in the local buffer, and send them to CBS users who view the video. Further, CBS intends for, or directs, the edge server to store data

in the buffer so that its end users can receive content with a lower latency.

142. While the Akamai edge server sends the requested segments to the user, it concurrently requests the next few segments in the stream from the datacenter cache or from the cache of another server. By doing so, the content can be streamed smoothly without pauses for buffering. Akamai advertises this process as "pre-fetching." CBS intends for and contracts with Akamai to use pre-fetching so that its users can receive content without pauses for buffering. CBS and other customers have the ability to configure the size of the segments to be fetched in the Akamai system. The Akamai CDN, as configured and customized by CBS, also allows CBS users to receive content without pauses for buffering by allowing end users to send byte range requests to the edge server.

143. While the content is being played back by an MPEG-DASH or HLS client, the client automatically selects the next segment to download and play based on current network conditions. The streaming server then provides the requested alternate segment, resulting in the server adjusting the data rate. CBS intends for and controls the Akamai CDN to adjust the data rate by directing, controlling, and/or inducing Akamai to provide the content on its CDN at different data rates.

144. As a further example, at least through contracting with Fastly and configuring and/or customizing aspects of the operation of the Fastly CDN, CBS has knowledge of the operations of the Fastly CDN and the steps the Fastly systems will perform in order to deliver content to CBS's users. CBS thus knowingly causes and specifically intends for Fastly to perform those steps, or directs and controls Fastly's performance of those steps by means of at least its contractual relationship with Fastly and by configuring and customizing Fastly's CDN.

145. For instance, utilizing Fastly's CDN requires storing segments in a local buffer on

an edge server, and at least by entering into a contractual relationship with Fastly, CBS knowingly intends for Fastly to do so, or directs and controls Fastly (either implicitly or explicitly) to do so. CBS intends for, or directs, the Fastly edge server to request the MPEG-DASH or HLS segments from a datacenter cache, store them in the local buffer, and send them to CBS users who view the video. Further, CBS intends for, or directs, the edge server to store data in the buffer so that its end users can receive content with a lower latency.

146. While the Fastly edge server sends the requested segments to the user, it concurrently requests the next few segments in the stream from the datacenter cache or from the cache of another server. By doing so, the content can be streamed smoothly without pauses for buffering. CBS intends for and contracts with (or has contracted with) Fastly to deliver content in this manner so that its users can receive content without pauses for buffering. CBS and other customers have the ability to configure the size of the segments to be fetched in the Fastly system. The Fastly CDN, as configured and customized by CBS, also allows CBS users to receive content without pauses for buffering by allowing end users to send byte range requests to the edge server.

147. While the content is being played back by an MPEG-DASH or HLS client, the client automatically selects from the alternatives the next segment to download and play based on current network conditions. The streaming server then provides the requested alternate segment, resulting in the server adjusting the data rate. CBS intends for and controls the Fastly CDN to adjust the data rate by directing, controlling, and/or inducing Fastly to provide the content on its CDN at different data rates.

148. As a further example, at least through contracting with Level 3 and configuring and/or customizing aspects of the operation of the Level 3 CDN, CBS has knowledge of the operations of the Level 3 CDN and the steps the Level 3 systems will perform in order to deliver

content to CBS's users. CBS thus knowingly causes and specifically intends for Level 3 to perform those steps, or directs and controls Level 3's performance of those steps by means of at least its contractual relationship with Level 3 and by configuring and customizing Level 3's CDN.

149. For instance, utilizing Level 3's CDN requires storing segments in a local buffer on an edge server, and at least by entering into a contractual relationship with Level 3, CBS knowingly intends for Level 3 to do so, or directs and controls Level 3 (either implicitly or explicitly) to do so. CBS intends for, or directs, the Level 3 edge server to request the MPEG-DASH or HLS segments from a datacenter cache, store them in the local buffer, and send them to CBS users who view the video. Further, CBS intends for, or directs, the edge server to store data in the buffer so that its end users can receive content with a lower latency.

150. While the Level 3 edge server sends the requested segments to the user, it concurrently requests the next few segments in the stream from the datacenter cache or from the cache of another server. By doing so, the content can be streamed smoothly without pauses for buffering. CBS intends for and contracts with Level 3 to deliver content in this manner so that its users can receive content without pauses for buffering. CBS and other customers have the ability to configure the size of the segments to be fetched in the Level 3 system. The Level 3 CDN, as configured and customized by CBS, also allows CBS users to receive content without pauses for buffering by allowing end users to send byte range requests to the edge server.

151. While the content is being played back by an MPEG-DASH or HLS client, the client automatically selects from the alternatives the next segment to download and play based on current network conditions. The streaming server then provides the requested alternate segment, resulting in the server adjusting the data rate. CBS intends for and controls the Level 3 CDN to adjust the data rate by directing, controlling, and/or inducing Level 3 to provide the content on its

CDN at different data rates.

152. As a further example, at least through contracting with Limelight and configuring and/or customizing aspects of the operation of the Limelight CDN, CBS has knowledge of the operations of the Limelight CDN and the steps the Limelight systems will perform in order to deliver content to CBS's users. CBS thus knowingly causes and specifically intends for Limelight to perform those steps, or directs and controls Limelight's performance of those steps by means of at least its contractual relationship with Limelight and by configuring and customizing Limelight's CDN.

153. For instance, utilizing Limelight's CDN requires storing segments in a local buffer on an edge server, and at least by entering into a contractual relationship with Limelight, CBS knowingly intends for Limelight to do so, or directs and controls Limelight (either implicitly or explicitly) to do so. CBS intends for, or directs, the Limelight edge server to request the MPEG-DASH or HLS segments from a datacenter cache, store them in the local buffer, and send them to CBS users who view the video. Further, CBS intends for, or directs, the edge server to store data in the buffer so that its end users can receive content with a lower latency.

154. While the Limelight edge server sends the requested segments to the user, it concurrently requests the next few segments in the stream from the datacenter cache or from the cache of another server. By doing so, the content can be streamed smoothly without pauses for buffering. CBS intends for and contracts with (or has contracted with) Limelight to deliver content in this manner so that its users can receive content without pauses for buffering. CBS and other customers have the ability to configure the size of the segments to be fetched in the Limelight system. The Limelight CDN, as configured and customized by CBS, also allows CBS users to receive content without pauses for buffering by allowing end users to send byte range requests to

the edge server.

155. While the content is being played back by an MPEG-DASH or HLS client, the client automatically selects from the alternatives the next segment to download and play based on current network conditions. The streaming server then provides the requested alternate segment, resulting in the server adjusting the data rate. CBS intends for and controls the Limelight CDN to adjust the data rate by directing, controlling, and/or inducing Limelight to provide the content on its CDN at different data rates.

156. CBS directly infringes one or more claims of the ’213 patent (including at least claim 16) under 35 U.S.C. § 271(a), literally and/or under the doctrine of equivalents, at least by directing and/or controlling at least the performance of the claimed steps by the CDNs to infringe the ’213 patent to deliver the CBS ’213 Services.

157. For example, CBS has directly infringed, and continues to directly infringe, claim 16 of the ’213 patent under 35 U.S.C. § 271(a), literally and/or under the doctrine of equivalents, at least by directing and/or controlling Akamai to deliver the CBS ’213 Services. For example, CBS has directly infringed, and continues to directly infringe, claim 16 of the ’213 patent under 35 U.S.C. § 271(a) literally and/or under the doctrine of equivalents, at least by directing and/or controlling Akamai (through at least contracting with Akamai and customizing the Akamai CDN) to infringe claim 16 by using a method of reducing latency in a network having a content server which hosts streaming media (“SM”) objects (such as videos) which comprise a plurality of time-ordered segments (such as HLS or MPEG-DASH segments) for distribution over said network through a plurality of helpers (“HSs”) (such as Akamai cache or edge servers) to a plurality of clients (such as users of the CBS ’213 Services). Further:

a. CBS directs and/or controls Akamai, at least via its contract with Akamai and/or its configuration and customization of Akamai's CDN, to receive a request for an SM object from one of said plurality of clients (such as a user of one of the CBS '213 Services requesting to watch a hosted video) at one of said plurality of helper servers (such as by directing and/or controlling one of the Akamai cache or edge servers to receive such a request from a user of one of the CBS '213 Services to watch a hosted video);

b. CBS directs and/or controls Akamai, at least via its contract with Akamai and/or its configuration and customization of Akamai's CDN, to allocate a buffer at one of said plurality of HSs to cache at least a portion of said requested SM object (such as by directing and/or controlling Akamai to allocate a local buffer to store portions of the stream as HLS or MPEG-DASH segments at the Akamai cache or edge servers);

c. CBS directs and/or controls Akamai, at least via its contract with Akamai and/or its configuration and customization of Akamai's CDN, to download said portion of said requested SM object to said requesting client, while concurrently retrieving a remaining portion of said requested SM object from one of another HS and said content server (such as by directing and/or controlling the Akamai cache or edge server to pre-fetch the next segment of video content by requesting the next HLS or MPEG-DASH segments in the stream from the datacenter cache, and/or by directing and/or controlling the Akamai cache or edge server to be capable of receiving a byte range request in order to download a segment of a requested video stream to a client while concurrently downloading the next segments from another server); and

d. CBS directs and/or controls Akamai, at least via its contract with Akamai and/or its configuration and customization of Akamai's CDN and/or its provision of content encoded at multiple bitrates, to adjust a data transfer rate at said one of said plurality of HSs for

transferring data from said one of said plurality of helper servers to said one of said plurality of clients (such as by directing and/or controlling Akamai to provide alternate segments encoded at different data rates to the client to accommodate the current network conditions (*e.g.*, the client's current bandwidth), such that providing the requested alternate segment results in an adjusted data rate).

158. As a further example, CBS has directly infringed, and continues to directly infringe, claim 16 of the '213 patent under 35 U.S.C. § 271(a), literally and/or under the doctrine of equivalents, at least by directing and/or controlling Fastly to deliver the CBS '213 Services. For example, CBS has directly infringed, and continues to directly infringe, claim 16 of the '213 patent under 35 U.S.C. § 271(a) literally and/or under the doctrine of equivalents, at least by directing and/or controlling Fastly (through at least contracting with Fastly and customizing the Fastly CDN) to infringe claim 16 by using a method of reducing latency in a network having a content server which hosts streaming media ("SM") objects (such as videos) which comprise a plurality of time-ordered segments (such as HLS or MPEG-DASH segments) for distribution over said network through a plurality of helpers ("HSs") (such as Fastly cache or edge servers) to a plurality of clients (such as users of the CBS '213 Services). Further:

a. CBS directs and/or controls Fastly, at least via its contract with Fastly and/or its configuration and customization of Fastly's CDN, to receive a request for an SM object from one of said plurality of clients (such as a user of one of the CBS '213 Services requesting to watch a hosted video) at one of said plurality of helper servers (such as by directing and/or controlling one of the Fastly cache or edge servers to receive such a request from a user of one of the CBS '213 Services to watch a hosted video);

b. CBS directs and/or controls Fastly, at least via its contract with Fastly and/or

its configuration and customization of Fastly's CDN, to allocate a buffer at one of said plurality of HSs to cache at least a portion of said requested SM object (such as by directing and/or controlling Fastly to allocate a local buffer to store portions of the stream as HLS or MPEG-DASH segments at the Fastly cache or edge servers);

c. CBS directs and/or controls Fastly, at least via its contract with Fastly and/or its configuration and customization of Fastly's CDN, to download said portion of said requested SM object to said requesting client, while concurrently retrieving a remaining portion of said requested SM object from one of another HS and said content server (such as by directing and/or controlling the Fastly cache or edge server to pre-fetch the next segment of video content by requesting the next HLS or MPEG-DASH segments in the stream from the datacenter cache, and/or by directing and/or controlling the Fastly cache or edge server to be capable of receiving a byte range request in order to download a segment of a requested video stream to a client while concurrently downloading the next segments from another server); and

d. CBS directs and/or controls Fastly, at least via its contract with Fastly and/or its configuration and customization of Fastly's CDN and/or its provision of content encoded at multiple bitrates, to adjust a data transfer rate at said one of said plurality of HSs for transferring data from said one of said plurality of helper servers to said one of said plurality of clients (such as by directing and/or controlling Fastly to provide alternate segments encoded at different data rates to the client to accommodate the current network conditions (e.g., the client's current bandwidth), such that providing the requested alternate segment results in an adjusted data rate).

159. As a further example, CBS has directly infringed, and continues to directly infringe, claim 16 of the '213 patent under 35 U.S.C. § 271(a), literally and/or under the doctrine of equivalents, at least by directing and/or controlling Level 3 to deliver the CBS '213 Services. For

example, CBS has directly infringed, and continues to directly infringe, claim 16 of the '213 patent under 35 U.S.C. § 271(a) literally and/or under the doctrine of equivalents, at least by directing and/or controlling Level 3 (through at least contracting with Level 3 and customizing the Level 3 CDN) to infringe claim 16 by using a method of reducing latency in a network having a content server which hosts streaming media ("SM") objects (such as videos) which comprise a plurality of time-ordered segments (such as HLS or MPEG-DASH segments) for distribution over said network through a plurality of helpers ("HSs") (such as Level 3 cache or edge servers) to a plurality of clients (such as users of the CBS '213 Services). Further:

a. CBS directs and/or controls Level 3, at least via its contract with Level 3 and/or its configuration and customization of Level 3's CDN, to receive a request for an SM object from one of said plurality of clients (such as a user of one of the CBS '213 Services requesting to watch a hosted video) at one of said plurality of helper servers (such as by directing and/or controlling one of the Level 3 cache or edge servers to receive such a request from a user of one of the CBS '213 Services to watch a hosted video);

b. CBS directs and/or controls Level 3, at least via its contract with Level 3 and/or its configuration and customization of Level 3's CDN, to allocate a buffer at one of said plurality of HSs to cache at least a portion of said requested SM object (such as by directing and/or controlling Level 3 to allocate a local buffer to store portions of the stream as HLS or MPEG-DASH segments at the Level 3 cache or edge servers);

c. CBS directs and/or controls Level 3, at least via its contract with Level 3 and/or its configuration and customization of Level 3's CDN, to download said portion of said requested SM object to said requesting client, while concurrently retrieving a remaining portion of said requested SM object from one of another HS and said content server (such as by directing

and/or controlling the Level 3 cache or edge server to pre-fetch the next segment of video content by requesting the next HLS or MPEG-DASH segments in the stream from the datacenter cache, and/or by directing and/or controlling the Level 3 cache or edge server to be capable of receiving a byte range request in order to download a segment of a requested video stream to a client while concurrently downloading the next segments from another server); and

d. CBS directs and/or controls Level 3, at least via its contract with Level 3 and/or its configuration and customization of Level 3's CDN and/or its provision of content encoded at multiple bitrates, to adjust a data transfer rate at said one of said plurality of HSs for transferring data from said one of said plurality of helper servers to said one of said plurality of clients (such as by directing and/or controlling Level 3 to provide alternate segments encoded at different data rates to the client to accommodate the current network conditions (e.g., the client's current bandwidth), such that providing the requested alternate segment results in an adjusted data rate).

160. As a further example, CBS has directly infringed, and continues to directly infringe, claim 16 of the '213 patent under 35 U.S.C. § 271(a), literally and/or under the doctrine of equivalents, at least by directing and/or controlling Limelight to deliver the CBS '213 Services. For example, CBS has directly infringed, and continues to directly infringe, claim 16 of the '213 patent under 35 U.S.C. § 271(a) literally and/or under the doctrine of equivalents, at least by directing and/or controlling Limelight (through at least contracting with Limelight and customizing the Limelight CDN) to infringe claim 16 by using a method of reducing latency in a network having a content server which hosts streaming media ("SM") objects (such as videos) which comprise a plurality of time-ordered segments (such as HLS or MPEG-DASH segments) for distribution over said network through a plurality of helpers ("HSs") (such as Limelight cache

or edge servers) to a plurality of clients (such as users of the CBS ’213 Services). Further:

a. CBS directs and/or controls Limelight, at least via its contract with Limelight and/or its configuration and customization of Limelight’s CDN, to receive a request for an SM object from one of said plurality of clients (such as a user of one of the CBS ’213 Services requesting to watch a hosted video) at one of said plurality of helper servers (such as by directing and/or controlling one of the Limelight cache or edge servers to receive such a request from a user of one of the CBS ’213 Services to watch a hosted video);

b. CBS directs and/or controls Limelight, at least via its contract with Limelight and/or its configuration and customization of Limelight’s CDN, to allocate a buffer at one of said plurality of HSs to cache at least a portion of said requested SM object (such as by directing and/or controlling Limelight to allocate a local buffer to store portions of the stream as HLS or MPEG-DASH segments at the Limelight cache or edge servers);

c. CBS directs and/or controls Limelight, at least via its contract with Limelight and/or its configuration and customization of Limelight’s CDN, to download said portion of said requested SM object to said requesting client, while concurrently retrieving a remaining portion of said requested SM object from one of another HS and said content server (such as by directing and/or controlling the Limelight cache or edge server to pre-fetch the next segment of video content by requesting the next HLS or MPEG-DASH segments in the stream from the datacenter cache, and/or by directing and/or controlling the Limelight cache or edge server to be capable of receiving a byte range request in order to download a segment of a requested video stream to a client while concurrently downloading the next segments from another server); and

d. CBS directs and/or controls Limelight, at least via its contract with

Limelight and/or its configuration and customization of Limelight's CDN and/or its provision of content encoded at multiple bitrates, to adjust a data transfer rate at said one of said plurality of HSs for transferring data from said one of said plurality of helper servers to said one of said plurality of clients (such as by directing and/or controlling Limelight to provide alternate segments encoded at different data rates to the client to accommodate the current network conditions (e.g., the client's current bandwidth), such that providing the requested alternate segment results in an adjusted data rate).

161. In addition or in the alternative, CBS has induced infringement, and continues to induce infringement, of one or more claims of the '213 patent under 35 U.S.C. § 271(b), literally and/or under the doctrine of equivalents. CBS has actively, knowingly, and intentionally induced (and continues to induce) infringement of the '213 patent by making, using, offering for sale, selling, supplying, maintaining, and/or supporting the CBS '213 Services; by contracting with the CDNs and customizing the CDNs with the specific intent to cause the CDNs to perform the steps claimed in the '213 patent to deliver video data, including the CBS '213 Services, to CBS's users, and with the knowledge that such actions infringe the '213 patent.

162. For example, at least through repeated correspondence from Sound View, CBS knows that at least Akamai, Fastly, Level 3, and Limelight perform the claimed methods of the '213 patent to deliver the CBS '213 Services, and that CBS induces the infringement of each of those CDNs. (*See* Exhibit G, incorporated herein by reference.) Moreover, CBS specifically intends that infringement, at least by continuing to contract with and utilize the Akamai, Fastly, Level 3, and Limelight CDNs to offer the CBS '213 Services; configuring the Akamai, Fastly, Level 3, and Limelight CDNs to perform the claimed methods of the '213 patent; and by encouraging and facilitating their infringement through the use of the CBS '213 Services by CBS's

users and/or the creation and dissemination of documentation related to the CBS '213 Services, including by, for example, encouraging and instructing its agents and contractors, such as Akamai, Fastly, Level 3, and Limelight, to provide video to CBS's users through the CBS '213 Services, causing the performance of the claimed methods with the knowledge that such actions infringe the '213 patent.

163. For example, CBS intends for and induces Akamai to infringe claim 16 to deliver the CBS '213 Services by using a method of reducing latency in a network having a content server which hosts SM objects (such as videos) which comprise a plurality of time-ordered segments (such as HLS or MPEG-DASH segments) for distribution over said network through a plurality of HSs (such as Akamai cache or edge servers) to a plurality of clients (such as users of the CBS '213 Services). CBS further intends for and induces Akamai to:

a. receive a request for an SM object from one of said plurality of clients (such as a user of one of the CBS '213 Services requesting to watch a hosted video) at one of said plurality of helper servers (such as one of the Akamai cache or edge servers, with knowledge that Akamai's cache or edge servers will receive such a request from a user of one of the CBS '213 Services to watch a hosted video);

b. allocate a buffer at one of said plurality of HSs to cache at least a portion of said requested SM object (such as by inducing Akamai to allocate a local buffer to store portions of the stream as HLS or MPEG-DASH segments at the Akamai cache or edge servers, with knowledge that Akamai's CDN will allocate such a buffer at one of the Akamai cache or edge servers to store portions of the stream as HLS or MPEG-DASH segments);

c. download said portion of said requested SM object to said requesting client, while concurrently retrieving a remaining portion of said requested SM object from one of another

HS and said content server (such as the Akamai cache or edge server pre-fetching the next segment of video content by requesting the next HLS or MPEG-DASH segments in the stream from the datacenter cache, with knowledge that Akamai's cache or edge servers will pre-fetch the next segment of video by requesting the next HLS or MPEG-DASH segment in the stream from the datacenter cache, and/or by directing and/or controlling the Akamai cache or edge server to be capable of receiving a byte range request in order to download a segment of a requested video stream to a client while concurrently downloading the next segments from another server); and

d. adjust a data transfer rate at said one of said plurality of HSs for transferring data from said one of said plurality of helper servers to said one of said plurality of clients (such as providing alternate segments encoded at different data rates to the client to accommodate the current network conditions (*e.g.*, the client's current bandwidth), and then providing the requested alternate segment resulting in an adjusted data rate, with knowledge that the Akamai CDN will provide alternate segments encoded at different data rates to the client).

164. As a further example, CBS intends for and induces Fastly to infringe claim 16 to deliver the CBS '213 Services by using a method of reducing latency in a network having a content server which hosts SM objects (such as videos) which comprise a plurality of time-ordered segments (such as HLS or MPEG-DASH segments) for distribution over said network through a plurality of HSs (such as Fastly cache or edge servers) to a plurality of clients (such as users of the CBS '213 Services). CBS further intends for and induces Fastly to:

a. receive a request for an SM object from one of said plurality of clients (such as a user of one of the CBS '213 Services requesting to watch a hosted video) at one of said plurality of helper servers (such as one of the Fastly cache or edge servers, with knowledge that Fastly's cache or edge servers will receive such a request from a user of one of the CBS '213

Services to watch a hosted video);

b. allocate a buffer at one of said plurality of HSs to cache at least a portion of said requested SM object (such as by inducing Fastly to allocate a local buffer to store portions of the stream as HLS or MPEG-DASH segments at the Fastly cache or edge servers, with knowledge that Fastly's CDN will allocate such a buffer at one of the Fastly cache or edge servers to store portions of the stream as HLS or MPEG-DASH segments);

c. download said portion of said requested SM object to said requesting client, while concurrently retrieving a remaining portion of said requested SM object from one of another HS and said content server (such as the Fastly cache or edge server pre-fetching the next segment of video content by requesting the next HLS or MPEG-DASH segments in the stream from the datacenter cache, with knowledge that Fastly's cache or edge servers will pre-fetch the next segment of video by requesting the next HLS or MPEG-DASH segment in the stream from the datacenter cache, and/or by directing and/or controlling the Fastly cache or edge server to be capable of receiving a byte range request in order to download a segment of a requested video stream to a client while concurrently downloading the next segments from another server); and

d. adjust a data transfer rate at said one of said plurality of HSs for transferring data from said one of said plurality of helper servers to said one of said plurality of clients (such as providing alternate segments encoded at different data rates to the client to accommodate the current network conditions (e.g., the client's current bandwidth), and then providing the requested alternate segment resulting in an adjusted data rate, with knowledge that the Fastly CDN will provide alternate segments encoded at different data rates to the client).

165. As a further example, CBS intends for and induces Level 3 to infringe claim 16 to deliver the CBS '213 Services by using a method of reducing latency in a network having a content

server which hosts SM objects (such as videos) which comprise a plurality of time-ordered segments (such as HLS or MPEG-DASH segments) for distribution over said network through a plurality of HSs (such as Level 3 cache or edge servers) to a plurality of clients (such as users of the CBS '213 Services). CBS further intends for and induces Level 3 to:

a. receive a request for an SM object from one of said plurality of clients (such as a user of one of the CBS '213 Services requesting to watch a hosted video) at one of said plurality of helper servers (such as one of the Level 3 cache or edge servers, with knowledge that Level 3's cache or edge servers will receive such a request from a user of one of the CBS '213 Services to watch a hosted video);

b. allocate a buffer at one of said plurality of HSs to cache at least a portion of said requested SM object (such as by inducing Level 3 to allocate a local buffer to store portions of the stream as HLS or MPEG-DASH segments at the Level 3 cache or edge servers, with knowledge that Level 3's CDN will allocate such a buffer at one of the Level 3 cache or edge servers to store portions of the stream as HLS or MPEG-DASH segments);

c. download said portion of said requested SM object to said requesting client, while concurrently retrieving a remaining portion of said requested SM object from one of another HS and said content server (such as the Level 3 cache or edge server pre-fetching the next segment of video content by requesting the next HLS or MPEG-DASH segments in the stream from the datacenter cache, with knowledge that Level 3's cache or edge servers will pre-fetch the next segment of video by requesting the next HLS or MPEG-DASH segment in the stream from the datacenter cache, and/or by directing and/or controlling the Level 3 cache or edge server to be capable of receiving a byte range request in order to download a segment of a requested video stream to a client while concurrently downloading the next segments from another server); and

d. adjust a data transfer rate at said one of said plurality of HSs for transferring data from said one of said plurality of helper servers to said one of said plurality of clients (such as providing alternate segments encoded at different data rates to the client to accommodate the current network conditions (e.g., the client's current bandwidth), and then providing the requested alternate segment resulting in an adjusted data rate, with knowledge that the Level 3 CDN will provide alternate segments encoded at different data rates to the client).

166. As a further example, CBS intends for and induces Limelight to infringe claim 16 to deliver the CBS '213 Services by using a method of reducing latency in a network having a content server which hosts SM objects (such as videos) which comprise a plurality of time-ordered segments (such as HLS or MPEG-DASH segments) for distribution over said network through a plurality of HSs (such as Limelight cache or edge servers) to a plurality of clients (such as users of the CBS '213 Services). CBS further intends for and induces Limelight to:

a. receive a request for an SM object from one of said plurality of clients (such as a user of one of the CBS '213 Services requesting to watch a hosted video) at one of said plurality of helper servers (such as one of the Limelight cache or edge servers, with knowledge that Limelight's cache or edge servers will receive such a request from a user of one of the CBS '213 Services to watch a hosted video);

b. allocate a buffer at one of said plurality of HSs to cache at least a portion of said requested SM object (such as by inducing Limelight to allocate a local buffer to store portions of the stream as HLS or MPEG-DASH segments at the Limelight cache or edge servers, with knowledge that Limelight's CDN will allocate such a buffer at one of the Limelight cache or edge servers to store portions of the stream as HLS or MPEG-DASH segments);

c. download said portion of said requested SM object to said requesting client,

while concurrently retrieving a remaining portion of said requested SM object from one of another HS and said content server (such as the Limelight cache or edge server pre-fetching the next segment of video content by requesting the next HLS or MPEG-DASH segments in the stream from the datacenter cache, with knowledge that Limelight's cache or edge servers will pre-fetch the next segment of video by requesting the next HLS or MPEG-DASH segment in the stream from the datacenter cache, and/or by directing and/or controlling the Limelight cache or edge server to be capable of receiving a byte range request in order to download a segment of a requested video stream to a client while concurrently downloading the next segments from another server); and

d. adjust a data transfer rate at said one of said plurality of HSs for transferring data from said one of said plurality of helper servers to said one of said plurality of clients (such as providing alternate segments encoded at different data rates to the client to accommodate the current network conditions (e.g., the client's current bandwidth), and then providing the requested alternate segment resulting in an adjusted data rate, with knowledge that the Limelight CDN will provide alternate segments encoded at different data rates to the client).

167. Sound View has been and continues to be damaged by CBS's infringement of the '213 patent and is entitled to recover from CBS the damages sustained by Sound View as a result of CBS's wrongful acts in an amount adequate to compensate Sound View for CBS's infringement subject to proof at trial.

168. In committing these acts of infringement, CBS committed egregious misconduct including, for example, acting despite knowing that its actions constituted infringement of a valid patent, or recklessly disregarding the fact that its actions constituted an unjustifiably high risk of infringement of a valid and enforceable patent.

169. CBS's infringement of the '213 patent was and is deliberate and willful, entitling Sound View to increased damages under 35 U.S.C. § 284 and to attorney fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

COUNT FIVE
INFRINGEMENT OF THE '796 PATENT

170. Sound View incorporates by reference the preceding paragraphs as if fully set forth herein.

171. The '796 patent is valid and enforceable.

172. At least by October 10, 2016, Sound View informed CBS that its systems and applications infringe the '796 patent. However, CBS has not stopped infringing.

173. CBS provides and has provided live streaming services, including at least CBS Interactive's streaming service CBS All Access and Showtime's streaming service Showtime Anytime (the "CBS '796 Services"), to allow users to watch live streaming video.

174. The CDNs, including Akamai, Fastly, Level 3, and Limelight, each support CBS's delivery of video content to users using MPEG-DASH and/or HLS. Moreover, each of the CDNs openly advertises and promotes the use of those protocols to deliver video content to users. Knowing that each of the CDNs supports the delivery of video content using MPEG-DASH and/or HLS, and directing or controlling such support, CBS delivers the CBS '796 Services to its users using at least the Akamai, Fastly, Level 3, and Limelight CDNs by transcoding videos into MPEG-DASH and/or HLS segments.

175. CBS contracts or has contracted with each of the CDNs, so that when at least certain CBS users request the CBS '796 Services video stream, the request is routed to one of the edge servers of the CDN, which receives the request. Moreover, on information and belief, CBS can and has configured and/or customized aspects of the operation of each of the CDNs in delivering

content to its users. For example, CBS can customize the operation of the Akamai CDN through configuration tools, such as Akamai's Luna Control Center. As a further example, CBS can customize the operation of the Fastly CDN through configuration tools, such as the Fastly Control Panel. As a further example, CBS can customize the operation of the Level 3 CDN through configuration tools, such as Level 3 CDN Portal. As a further example, CBS can customize the operation of the Limelight CDN through configuration tools, such as Limelight Control.

176. For example, at least through contracting with Akamai and configuring and/or customizing aspects of the operation of the Akamai CDN, CBS has knowledge of the operations of the Akamai CDN and the steps the Akamai systems will perform in order to deliver content to CBS's users. CBS thus knowingly causes and specifically intends for Akamai to perform those steps, or directs and controls Akamai's performance of these steps by means of at least its contractual relationship with Akamai and by configuring and customizing Akamai's CDN.

177. For example, CBS contracts with Akamai knowing that when at least certain CBS users request the CBS '796 Services live stream, the request is routed to an Akamai edge server, which receives the request, and that the Akamai edge server allocates a local buffer to store portions of the stream. CBS contracts with Akamai also knowing that when a second user requests the same video stream, the Akamai edge server will provide the stream from the same local buffer, because Akamai's edge servers serve the second request from the same local buffer because doing so saves space and bandwidth. CBS's contract with Akamai thus implicitly or explicitly directs and controls Akamai to serve a second request for the same stream from the same local buffer. Because the Akamai edge server already has the requested stream in a local buffer, it takes less time to send it to the second user.

178. As a further example, at least through contracting with Fastly and configuring

and/or customizing aspects of the operation of the Fastly CDN, CBS has knowledge of the operations of the Fastly CDN and the steps the Fastly systems will perform in order to deliver content to CBS's users. CBS thus knowingly causes and specifically intends for Fastly to perform those steps, or directs and controls Fastly's performance of those steps by means of at least its contractual relationship with Fastly and by configuring and customizing Fastly's CDN.

179. For instance, CBS contracts or has contracted with Fastly knowing that when at least certain CBS users request the CBS '796 Services live stream, the request is routed to a Fastly edge server, which receives the request, and that the Fastly edge server allocates a local buffer to store portions of the stream. CBS contracts with Fastly also knowing that when a second user requests the same video stream, the Fastly edge server will provide the stream from the same local buffer, because Fastly's edge servers serve the second request from the same local buffer because doing so saves space and bandwidth. CBS's contract with Fastly thus implicitly or explicitly directs and controls Fastly to serve a second request for the same stream from the same local buffer. Because the Fastly edge server already has the requested stream in a local buffer, it takes less time to send it to the second user.

180. For example, at least through contracting with Level 3 and configuring and/or customizing aspects of the operation of the Level 3 CDN, CBS has knowledge of the operations of the Level 3 CDN and the steps the Level 3 systems will perform in order to deliver content to CBS's users. CBS thus knowingly causes and specifically intends for Level 3 to perform those steps, or directs and controls Level 3's performance of these steps by means of at least its contractual relationship with Level 3 and by configuring and customizing Level 3's CDN.

181. For example, CBS contracts with Level 3 knowing that when at least certain CBS users request the CBS '796 Services live stream, the request is routed to an Level 3 edge server,

which receives the request, and that the Level 3 edge server allocates a local buffer to store portions of the stream. CBS contracts with Level 3 also knowing that when a second user requests the same video stream, the Level 3 edge server will provide the stream from the same local buffer, because Level 3's edge servers serve the second request from the same local buffer because doing so saves space and bandwidth. CBS's contract with Level 3 thus implicitly or explicitly directs and controls Level 3 to serve a second request for the same stream from the same local buffer. Because the Level 3 edge server already has the requested stream in a local buffer, it takes less time to send it to the second user.

182. For example, at least through contracting with Limelight and configuring and/or customizing aspects of the operation of the Limelight CDN, CBS has knowledge of the operations of the Limelight CDN and the steps the Limelight systems will perform in order to deliver content to CBS's users. CBS thus knowingly causes and specifically intends for Limelight to perform those steps, or directs and controls Limelight's performance of these steps by means of at least its contractual relationship with Limelight and by configuring and customizing Limelight's CDN.

183. For example, CBS contracts with Limelight knowing that when at least certain CBS users request the CBS '796 Services live stream, the request is routed to an Limelight edge server, which receives the request, and that the Limelight edge server allocates a local buffer to store portions of the stream. CBS contracts with Limelight also knowing that when a second user requests the same video stream, the Limelight edge server will provide the stream from the same local buffer, because Limelight's edge servers serve the second request from the same local buffer because doing so saves space and bandwidth. CBS's contract with Limelight thus implicitly or explicitly directs and controls Limelight to serve a second request for the same stream from the same local buffer. Because the Limelight edge server already has the requested stream in a local

buffer, it takes less time to send it to the second user.

184. CBS directly infringes one or more claims of the '796 patent (including at least claim 27) under 35 U.S.C. § 271(a), literally and/or under the doctrine of equivalents, at least by directing and/or controlling at least the performance of the claimed steps by Akamai, Fastly, Level 3, and Limelight to infringe the '796 patent to deliver the the CBS '796 Services.

185. For example, CBS has directly infringed, and continues to directly infringe, claim 27 of the '796 patent under 35 U.S.C. § 271(a), literally and/or under the doctrine of equivalents, at least by directing and/or controlling Akamai (through at least contracting with Akamai and customizing the Akamai CDN) to infringe claim 27 by using, in a network having a content server (such as a web content server) which hosts a plurality of live SM broadcast objects (such as live video) for distribution over said network through a plurality of HSs (such as Akamai's edge servers) to a plurality of clients (such as CBS's users), a method of reducing start-up latency associated with distributing said plurality of live SM broadcast objects from said content server and said plurality of HSs to said plurality of clients. Further:

a. CBS directs and/or controls Akamai, at least via its contract with Akamai and/or its configuration and customization of Akamai's CDN, to receive a first request for one of said plurality of live SM broadcast objects at one of said plurality of HSs (such as by directing and/or controlling Akamai to receive a first request from a CBS user to watch a live video at one of Akamai's edge servers);

b. CBS directs and/or controls Akamai, at least via its contract with Akamai and/or its configuration and customization of Akamai's CDN, to service said first request from a non pre-configured playout history ("PH") buffer (such as by directing and/or controlling Akamai to contact a content server, retrieve and cache the requested MPEG-DASH or HLS segments at

the Akamai edge server in a local buffer, and deliver the requested content to the client) at a first data rate;

c. CBS directs and/or controls Akamai, at least via its contract with Akamai and/or its configuration and customization of Akamai's CDN, to receive a second request for said one of said plurality of live SM broadcast objects at said one of said plurality of HSs (such as by directing and/or controlling Akamai to receive a second request for the same MPEG-DASH or HLS segments at the Akamai edge server); and

d. CBS directs and/or controls Akamai, at least via its contract with Akamai and/or its configuration and customization of Akamai's CDN, to partially service said second request from said non pre-configured PH buffer (such as by directing and/or controlling Akamai to deliver the requested MPEG-DASH or HLS segments to the client from the same local buffer on the Akamai edge server) at a second data rate, wherein said second data rate is higher than said first data rate.

186. As a further example, CBS has directly infringed, and continues to directly infringe, claim 27 of the '796 patent under 35 U.S.C. § 271(a), literally and/or under the doctrine of equivalents, at least by directing and/or controlling Fastly (through at least contracting with Fastly and customizing the Fastly CDN) to infringe claim 27 by using, in a network having a content server (such as a web content server) which hosts a plurality of live SM broadcast objects (such as live video) for distribution over said network through a plurality of HSs (such as Fastly's edge servers) to a plurality of clients (such as CBS's users), a method of reducing start-up latency associated with distributing said plurality of live SM broadcast objects from said content server and said plurality of HSs to said plurality of clients. Further:

a. CBS directs and/or controls Fastly, at least via its contract with Fastly and/or

its configuration and customization of Fastly's CDN, to receive a first request for one of said plurality of live SM broadcast objects at one of said plurality of HSs (such as by directing and/or controlling Fastly to receive a first request from a CBS user to watch a live video at one of Fastly's edge servers);

b. CBS directs and/or controls Fastly, at least via its contract with Fastly and/or its configuration and customization of Fastly's CDN, to service said first request from a non pre-configured playout history ("PH") buffer (such as by directing and/or controlling Fastly to contact a content server, retrieve and cache the requested MPEG-DASH or HLS segments at the Fastly edge server in a local buffer, and deliver the requested content to the client) at a first data rate;

c. CBS directs and/or controls Fastly, at least via its contract with Fastly and/or its configuration and customization of Fastly's CDN, to receive a second request for said one of said plurality of live SM broadcast objects at said one of said plurality of HSs (such as by directing and/or controlling Fastly to receive a second request for the same MPEG-DASH or HLS segments at the Fastly edge server); and

d. CBS directs and/or controls Fastly, at least via its contract with Fastly and/or its configuration and customization of Fastly's CDN, to partially service said second request from said non pre-configured PH buffer (such as by directing and/or controlling Fastly to deliver the requested MPEG-DASH or HLS segments to the client from the same local buffer on the Fastly edge server) at a second data rate, wherein said second data rate is higher than said first data rate.

187. As a further example, CBS has directly infringed, and continues to directly infringe, claim 27 of the '796 patent under 35 U.S.C. § 271(a), literally and/or under the doctrine of equivalents, at least by directing and/or controlling Level 3 (through at least contracting with Level 3 and customizing the Level 3 CDN) to infringe claim 27 by using, in a network having a content

server (such as a web content server) which hosts a plurality of live SM broadcast objects (such as live video) for distribution over said network through a plurality of HSs (such as Level 3's edge servers) to a plurality of clients (such as CBS's users), a method of reducing start-up latency associated with distributing said plurality of live SM broadcast objects from said content server and said plurality of HSs to said plurality of clients. Further:

a. CBS directs and/or controls Level 3, at least via its contract with Level 3 and/or its configuration and customization of Level 3's CDN, to receive a first request for one of said plurality of live SM broadcast objects at one of said plurality of HSs (such as by directing and/or controlling Level 3 to receive a first request from a CBS user to watch a live video at one of Level 3's edge servers);

b. CBS directs and/or controls Level 3, at least via its contract with Level 3 and/or its configuration and customization of Level 3's CDN, to service said first request from a non pre-configured playout history ("PH") buffer (such as by directing and/or controlling Level 3 to contact a content server, retrieve and cache the requested MPEG-DASH or HLS segments at the Level 3 edge server in a local buffer, and deliver the requested content to the client) at a first data rate;

c. CBS directs and/or controls Level 3, at least via its contract with Level 3 and/or its configuration and customization of Level 3's CDN, to receive a second request for said one of said plurality of live SM broadcast objects at said one of said plurality of HSs (such as by directing and/or controlling Level 3 to receive a second request for the same MPEG-DASH or HLS segments at the Level 3 edge server); and

d. CBS directs and/or controls Level 3, at least via its contract with Level 3 and/or its configuration and customization of Level 3's CDN, to partially service said second

request from said non pre-configured PH buffer (such as by directing and/or controlling Level 3 to deliver the requested MPEG-DASH or HLS segments to the client from the same local buffer on the Level 3 edge server) at a second data rate, wherein said second data rate is higher than said first data rate.

188. As a further example, CBS has directly infringed, and continues to directly infringe, claim 27 of the '796 patent under 35 U.S.C. § 271(a), literally and/or under the doctrine of equivalents, at least by directing and/or controlling Limelight (through at least contracting with Limelight and customizing the Limelight CDN) to infringe claim 27 by using, in a network having a content server (such as a web content server) which hosts a plurality of live SM broadcast objects (such as live video) for distribution over said network through a plurality of HSs (such as Limelight's edge servers) to a plurality of clients (such as CBS's users), a method of reducing start-up latency associated with distributing said plurality of live SM broadcast objects from said content server and said plurality of HSs to said plurality of clients. Further:

a. CBS directs and/or controls Limelight, at least via its contract with Limelight and/or its configuration and customization of Limelight's CDN, to receive a first request for one of said plurality of live SM broadcast objects at one of said plurality of HSs (such as by directing and/or controlling Limelight to receive a first request from a CBS user to watch a live video at one of Limelight's edge servers);

b. CBS directs and/or controls Limelight, at least via its contract with Limelight and/or its configuration and customization of Limelight's CDN, to service said first request from a non pre-configured playout history ("PH") buffer (such as by directing and/or controlling Limelight to contact a content server, retrieve and cache the requested MPEG-DASH or HLS segments at the Limelight edge server in a local buffer, and deliver the requested content

to the client) at a first data rate;

c. CBS directs and/or controls Limelight, at least via its contract with Limelight and/or its configuration and customization of Limelight's CDN, to receive a second request for said one of said plurality of live SM broadcast objects at said one of said plurality of HSs (such as by directing and/or controlling Limelight to receive a second request for the same MPEG-DASH or HLS segments at the Limelight edge server); and

d. CBS directs and/or controls Limelight, at least via its contract with Limelight and/or its configuration and customization of Limelight's CDN, to partially service said second request from said non pre-configured PH buffer (such as by directing and/or controlling Limelight to deliver the requested MPEG-DASH or HLS segments to the client from the same local buffer on the Limelight edge server) at a second data rate, wherein said second data rate is higher than said first data rate.

189. In addition or in the alternative, CBS has induced infringement, and continues to induce infringement, of one or more claims of the '796 patent under 35 U.S.C. § 271(b), literally and/or under the doctrine of equivalents. CBS has actively, knowingly, and intentionally induced (and continues to induce) infringement of the '796 patent by making, using, offering for sale, selling, supplying, maintaining, and/or supporting the CBS '796 Services; by contracting with the CDNs and customizing the CDNs with the specific intent to cause the CDNs to perform the steps claimed in the '796 patent to deliver video data, including the CBS '796 Services, to CBS's users, and with the knowledge that such actions infringe the '796 patent.

190. For example, at least through repeated correspondence from Sound View, CBS knows that at least Akamai, Fastly, Level 3, and Limelight perform the claimed methods of the '796 patent, and that CBS induces the infringement of each of those CDNs. (*See* Exhibit G,

incorporated herein by reference.) Moreover, CBS specifically intends that infringement, at least by continuing to contract with and utilize the Akamai, Fastly, Level 3, and Limelight CDNs to offer the CBS '796 Services; configuring or customizing the Akamai, Fastly, Level 3, and Limelight CDNs to perform the claimed methods of the '796 patent; and by encouraging and facilitating their infringement through the use of the CBS '796 Services by CBS's users and/or the creation and dissemination of documentation related to the CBS '796 Services, including by, for example, encouraging and instructing its agents and contractors, such as Akamai, Fastly, Level 3, and Limelight, to provide video to CBS's users through the CBS '796 Services, causing the performance of the claimed methods with the knowledge that such actions infringe the '796 patent

191. For example, CBS intends for and induces Akamai to infringe claim 27 to deliver the CBS '796 Services by using, in a network having a content server (such as a web content server) which hosts a plurality of live SM broadcast objects (such as live video) for distribution over said network through a plurality of HSs (such as Akamai's edge servers) to a plurality of clients (such as CBS's users), a method of reducing start-up latency associated with distributing said plurality of live SM broadcast objects from said content server and said plurality of HSs to said plurality of clients, said method comprising:

a. receiving a first request for one of said plurality of live SM broadcast objects (such as a CBS user requesting to watch a live video) at one of said plurality of HSs (such as the Akamai edge servers);

b. servicing said first request from a non pre-configured PH buffer (such as by contacting a content server, retrieving and caching the requested MPEG-DASH or HLS segments at the Akamai edge server in a local buffer, and delivering the requested content to the client) at a first data rate;

c. receiving a second request for said one of said plurality of live SM broadcast objects at said one of said plurality of HSs (such as receiving a second request for the same MPEG-DASH or HLS segments at the Akamai edge server); and

d. partially servicing said second request from said non pre-configured PH buffer (such as by delivering the requested MPEG-DASH or HLS segments to the client from the same local buffer on the Akamai edge server) at a second data rate, wherein said second data rate is higher than said first data rate.

192. As a further example, CBS intends for and induces Fastly to infringe claim 27 to deliver the CBS '796 Services by using, in a network having a content server (such as a web content server) which hosts a plurality of live SM broadcast objects (such as live video) for distribution over said network through a plurality of HSs (such as Fastly's edge servers) to a plurality of clients (such as CBS's users), a method of reducing start-up latency associated with distributing said plurality of live SM broadcast objects from said content server and said plurality of HSs to said plurality of clients, said method comprising:

a. receiving a first request for one of said plurality of live SM broadcast objects (such as a CBS user requesting to watch a live video) at one of said plurality of HSs (such as the Fastly edge servers);

b. servicing said first request from a non pre-configured PH buffer (such as by contacting a content server, retrieving and caching the requested MPEG-DASH or HLS segments at the Fastly edge server in a local buffer, and delivering the requested content to the client) at a first data rate;

c. receiving a second request for said one of said plurality of live SM broadcast objects at said one of said plurality of HSs (such as receiving a second request for the same MPEG-

DASH or HLS segments at the Fastly edge server); and

d. partially servicing said second request from said non pre-configured PH buffer (such as by delivering the requested MPEG-DASH or HLS segments to the client from the same local buffer on the Fastly edge server) at a second data rate, wherein said second data rate is higher than said first data rate.

193. For example, CBS intends for and induces Level 3 to infringe claim 27 to deliver the CBS '796 Services by using, in a network having a content server (such as a web content server) which hosts a plurality of live SM broadcast objects (such as live video) for distribution over said network through a plurality of HSs (such as Level 3's edge servers) to a plurality of clients (such as CBS's users), a method of reducing start-up latency associated with distributing said plurality of live SM broadcast objects from said content server and said plurality of HSs to said plurality of clients, said method comprising:

a. receiving a first request for one of said plurality of live SM broadcast objects (such as a CBS user requesting to watch a live video) at one of said plurality of HSs (such as the Level 3 edge servers);

b. servicing said first request from a non pre-configured PH buffer (such as by contacting a content server, retrieving and caching the requested MPEG-DASH or HLS segments at the Level 3 edge server in a local buffer, and delivering the requested content to the client) at a first data rate;

c. receiving a second request for said one of said plurality of live SM broadcast objects at said one of said plurality of HSs (such as receiving a second request for the same MPEG-DASH or HLS segments at the Level 3 edge server); and

d. partially servicing said second request from said non pre-configured PH

buffer (such as by delivering the requested MPEG-DASH or HLS segments to the client from the same local buffer on the Level 3 edge server) at a second data rate, wherein said second data rate is higher than said first data rate.

194. For example, CBS intends for and induces Limelight to infringe claim 27 to deliver the CBS '796 Services by using, in a network having a content server (such as a web content server) which hosts a plurality of live SM broadcast objects (such as live video) for distribution over said network through a plurality of HSs (such as Limelight's edge servers) to a plurality of clients (such as CBS's users), a method of reducing start-up latency associated with distributing said plurality of live SM broadcast objects from said content server and said plurality of HSs to said plurality of clients, said method comprising:

a. receiving a first request for one of said plurality of live SM broadcast objects (such as a CBS user requesting to watch a live video) at one of said plurality of HSs (such as the Limelight edge servers);

b. servicing said first request from a non pre-configured PH buffer (such as by contacting a content server, retrieving and caching the requested MPEG-DASH or HLS segments at the Limelight edge server in a local buffer, and delivering the requested content to the client) at a first data rate;

c. receiving a second request for said one of said plurality of live SM broadcast objects at said one of said plurality of HSs (such as receiving a second request for the same MPEG-DASH or HLS segments at the Limelight edge server); and

d. partially servicing said second request from said non pre-configured PH buffer (such as by delivering the requested MPEG-DASH or HLS segments to the client from the same local buffer on the Limelight edge server) at a second data rate, wherein said second data

rate is higher than said first data rate.

195. Sound View has been and continues to be damaged by CBS's infringement of the '796 patent and is entitled to recover from CBS the damages sustained by Sound View as a result of CBS's wrongful acts in an amount adequate to compensate Sound View for CBS's infringement subject to proof at trial.

196. In committing these acts of infringement, CBS committed egregious misconduct including, for example, acting despite knowing that its actions constituted infringement of a valid patent, or recklessly disregarding the fact that its actions constituted an unjustifiably high risk of infringement of a valid and enforceable patent.

197. CBS's infringement of the '796 patent was and is deliberate and willful, entitling Sound View to increased damages under 35 U.S.C. § 284 and to attorney fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

RELIEF REQUESTED

Wherefore, Sound View respectfully requests that this Court enter judgment against CBS as follows:

a) that CBS has infringed each of the Patents-in-Suit;

b) that CBS's infringement of the '371, '133, '213, and '796 patents is and/or has been willful;

c) that Sound View be awarded damages in accordance with 35 U.S.C. § 284, including treble damages and, if necessary to adequately compensate Sound View for CBS's infringement, an accounting;

d) that this case is exceptional under 35 U.S.C. § 285;

e) that Sound View be awarded the attorney's fees, costs, and expenses that it incurs in prosecuting this action; and

f) that Sound View be awarded further relief at law or in equity as the Court deems just and proper.

DEMAND FOR JURY TRIAL

Sound View demands a trial by jury on all claims and issues so triable.

Dated: January 25, 2019

By: */s/ John C. Phillips, Jr.*

John C. Phillips, Jr. (No. 110)
Megan C. Haney (No. 5016)
PHILLIPS, GOLDMAN, MCLAUGHLIN & HALL, P.A.
1200 North Broom Street
Wilmington, Delaware 19806-4204
Telephone: (302) 655-4200
Facsimile: (302) 655-4210
jcp@pgmhlaw.com
mch@pgmhlaw.com

Of Counsel:

DESMARAIS LLP
Alan S. Kellman
Richard M. Cowell
Edward Geist
Carson Olsheski
230 Park Avenue
New York, NY 10169
Tel: (212) 351-3400
Fax: (212) 351-3401
akellman@desmaraisllp.com
rcowell@desmaraisllp.com
egeist@desmaraisllp.com
colsheski@desmaraisllp.com

Attorneys for Plaintiff Sound View Innovations, LLC